

INTERNATIONAL SEARCH REPORT

Inter... al Application No
PCT/JP2004/015564

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01L51/30

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 H01L

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, CHEM ABS Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	Y. CAO ET AL.: "Improved quantum efficiency for electroluminescence in semiconducting polymers" NATURE, vol. 397, 4 February 1999 (1999-02-04), pages 414-417, XP008043621 MACMILLAN JOURNALS, LONDON, GB	1-4,6-13
A	abstract page 415, column 2, paragraph 2 - page 416, column 1, paragraph 2 figure 2 ----- -/--	5

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

* Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- *O* document referring to an oral disclosure, use, exhibition or other means
- *P* document published prior to the international filing date but later than the priority date claimed

- *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
- *&* document member of the same patent family

Date of the actual completion of the international search

24 February 2005

Date of mailing of the international search report

07/03/2005

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax (+31-70) 340-3016

Authorized officer

Paisdor, B

INTERNATIONAL SEARCH REPORT

International Application No

PCT/JP2004/015564

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	EP 1 179 558 A (NATIONAL INSTITUTE OF ADVANCED INDUSTRIAL SCIENCE AND TECHNOLOGY; DAIN) 13 February 2002 (2002-02-13) cited in the application abstract; figures 2-5 paragraph '0065! paragraph '0074! - paragraph '0092! -----	1-13
Y	YANG K ET AL: "Effects of alternate doped structures on organic electroluminescent devices" PREPARATION AND CHARACTERIZATION, ELSEVIER SEQUOIA, NL, vol. 408, no. 1-2, 3 April 2002 (2002-04-03), pages 206-210, XP004351364 ISSN: 0040-6090 page 206, column 2, paragraph 2.; figure 1 -----	1-13
X	EP 1 220 341 A (KABUSHIKI KAISHA TOSHIBA) 3 July 2002 (2002-07-03) abstract; figure 1	1-4,6-13
Y	page 12 - page 15; examples -----	5
X	EP 1 143 773 A (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD) 10 October 2001 (2001-10-10) abstract; figures 1,4 paragraph '0237! - paragraph '0245! paragraph '0180! - paragraph '0223! -----	1-4,6-13
X	FUJII A ET AL: "EMISSION ENHANCEMENT IN ELECTROLUMINESCENT DIODE UTILIZING POLY(3-ALKYLTHIOPHENE) DOPED WITH OXADIAZOLE DERIVATIVE" JOURNAL OF PHYSICS D. APPLIED PHYSICS, IOP PUBLISHING, BRISTOL, GB, vol. 28, no. 10, 14 October 1995 (1995-10-14), pages 2135-2138, XP000543465 ISSN: 0022-3727 page 2135, paragraph 2. - page 2136; figure 1 page 2137, column 2 ----- -/--	1-4,6-13

INTERNATIONAL SEARCH REPORT

Intel. Application No

PCT/JP2004/015564

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	<p>CHUNG S-J ET AL: "HIGHLY EFFICIENT LIGHT-EMITTING DIODES BASED ON AN ORGANIC-SOLUBLE POLY(P-PHENYLENEVINYLENE) DERIVATIVE CARRYING THE ELECTRON- TRANSPORTING PBD MOIETY" ADVANCED MATERIALS, VCH VERLAGSGESELLSCHAFT, WEINHEIM, DE, vol. 10, no. 14, 1 October 1998 (1998-10-01), pages 1112-1116, XP000781875 ISSN: 0935-9648 the whole document</p> <p>-----</p>	1-13

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/JP2004/015564

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1179558	A	13-02-2002	JP 2000281821 A	10-10-2000
			EP 1179558 A1	13-02-2002
			WO 0058391 A1	05-10-2000
			US 2004195206 A1	07-10-2004
EP 1220341	A	03-07-2002	EP 1220341 A2	03-07-2002
			JP 2002280183 A	27-09-2002
			US 2002106531 A1	08-08-2002
EP 1143773	A	10-10-2001	EP 1143773 A1	10-10-2001
			WO 0126425 A1	12-04-2001
			JP 2001189193 A	10-07-2001